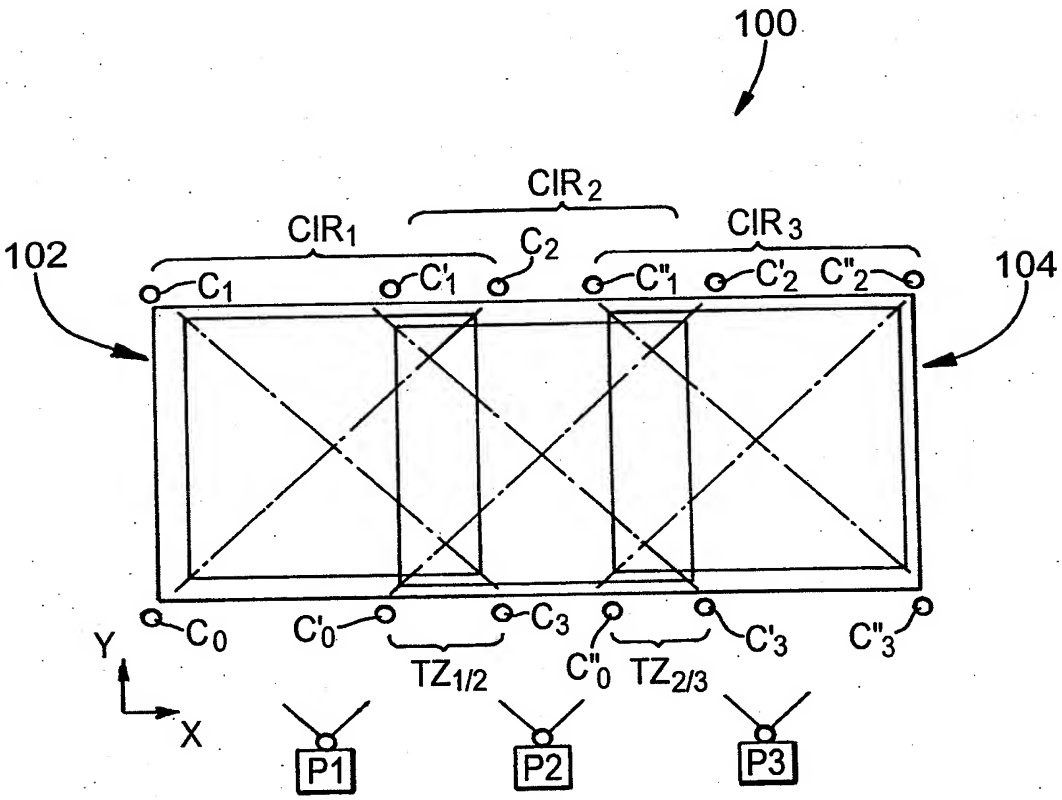

100
CIR2
CIR1
CIR3
102
104
C1
C'1
C2
C"1
C'2
C"2
C0
C'0
C3
C"0
C'3
C"3
TZ1/2
TZ2/3
Y
X
P1
P2
P3

FIG. 1

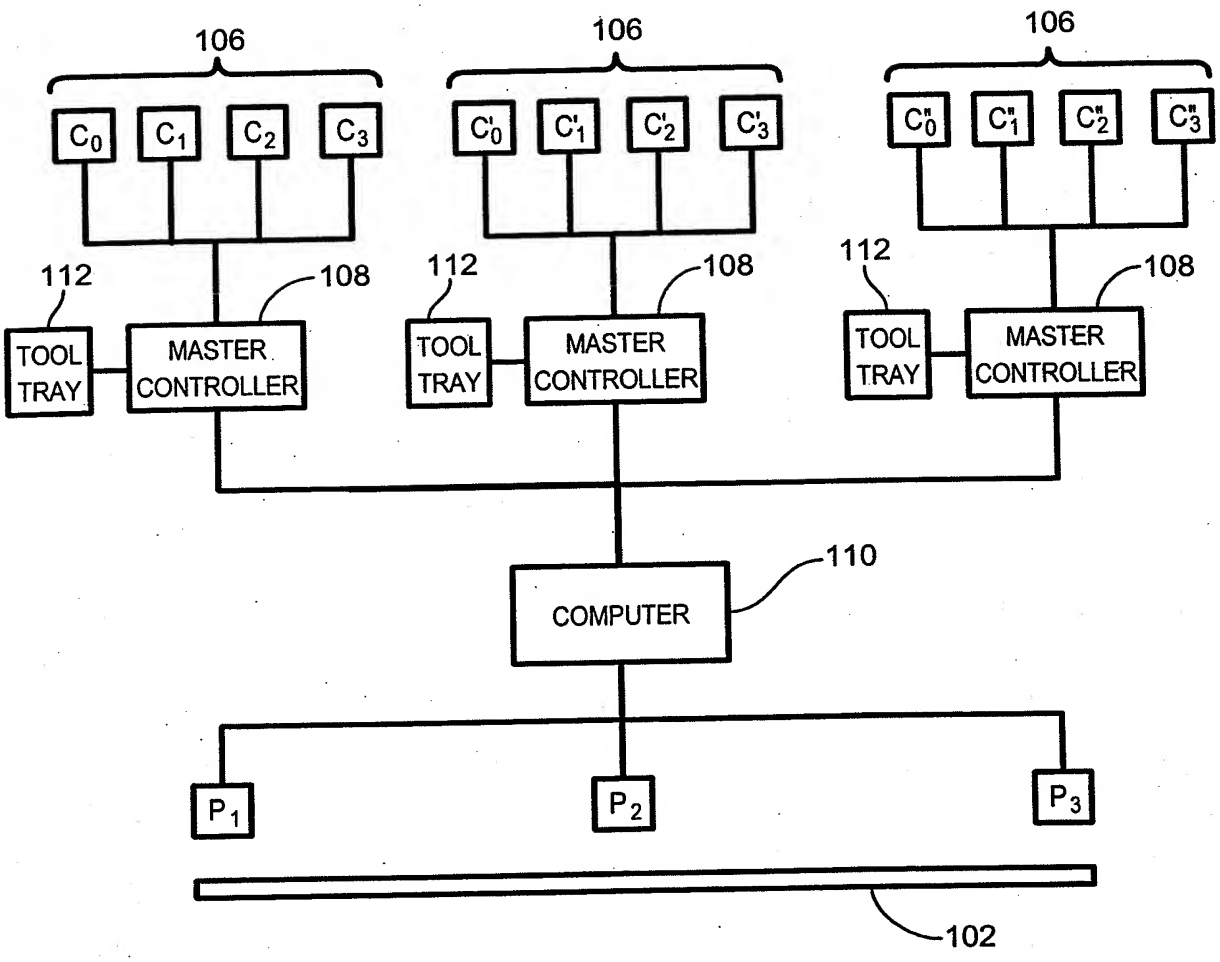

106
106
106
C0
C1
C2
C3
C'0
C'1
C'2
C'3
C"0
C"1
C"2
C"3
112
108
112
108
112
108
TOOL TRAY
MASTER CONTROLLER
TOOL TRAY
MASTER CONTROLLER
TOOL TRAY
MASTER CONTROLLER
110
COMPUTER
P1
P2
P3
102

FIG. 2

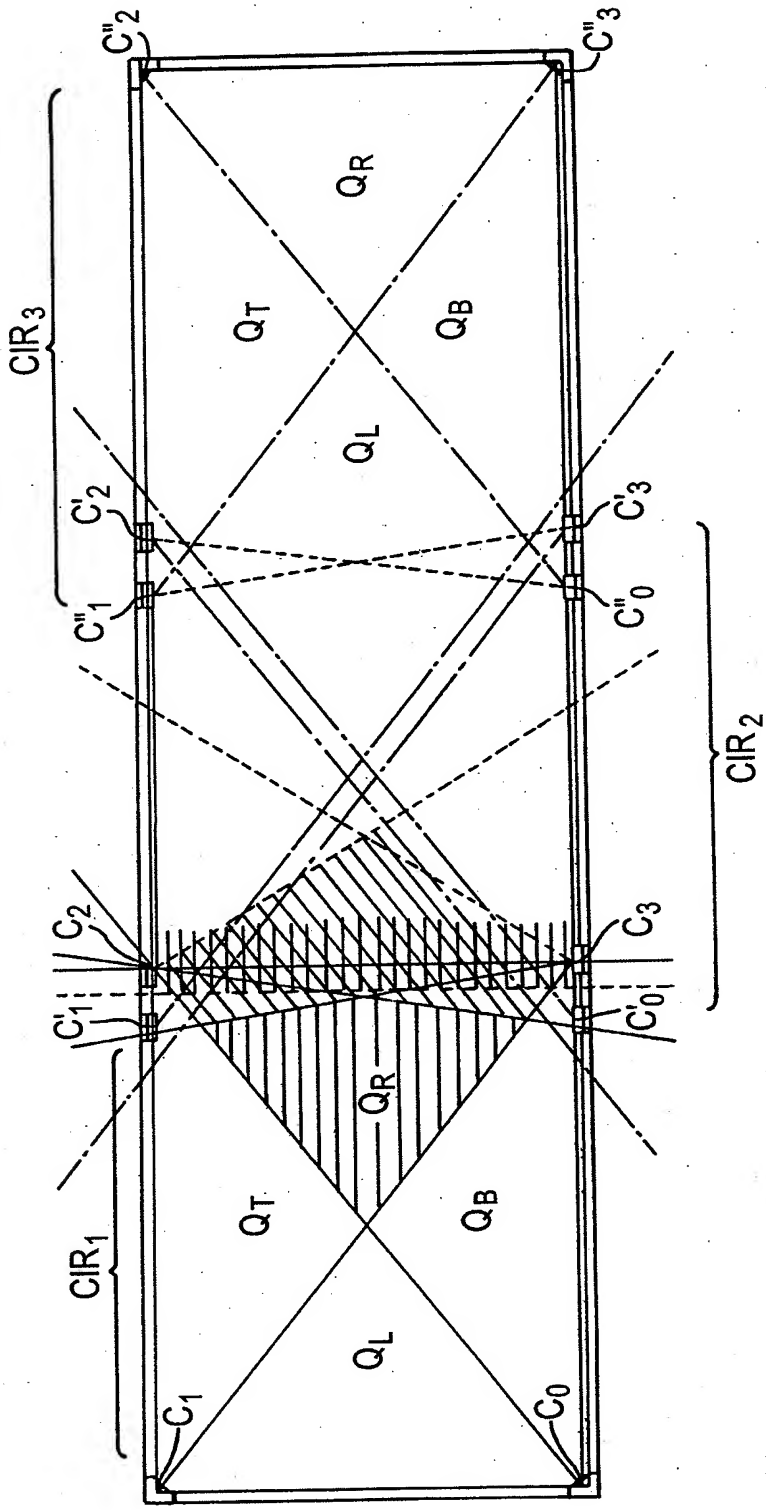

C"2
C"3
QR
QT
QB
QL
CIR3
C'2
C'3
C"1
C"0
CIR2
C2
C3
C'1
C'0
QR
QT
QB
QL
CIR1
C1
C0

FIG. 3a

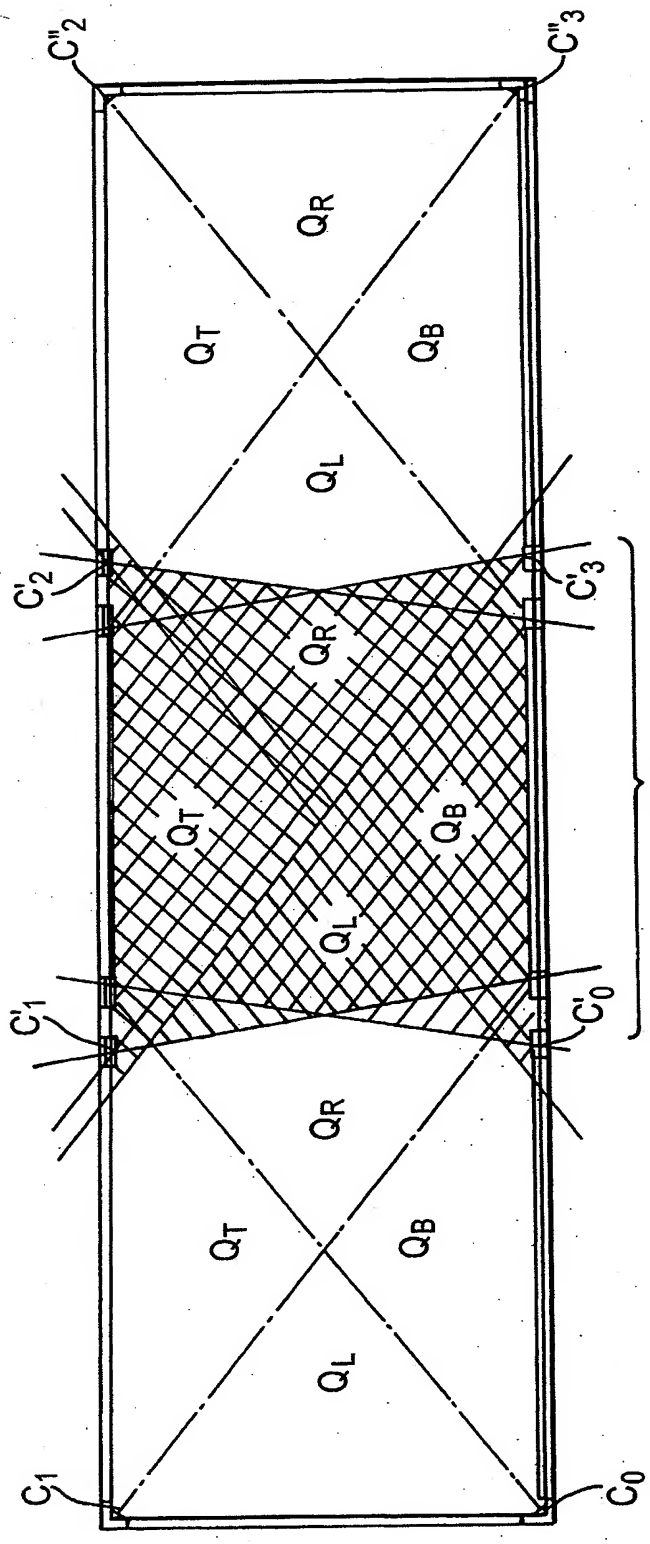


FIG. 3b

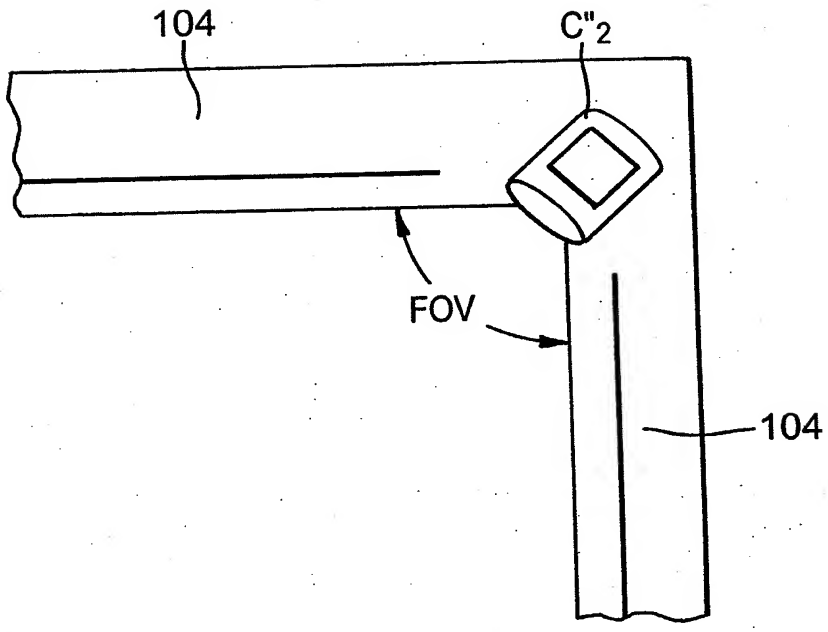


FIG. 4a

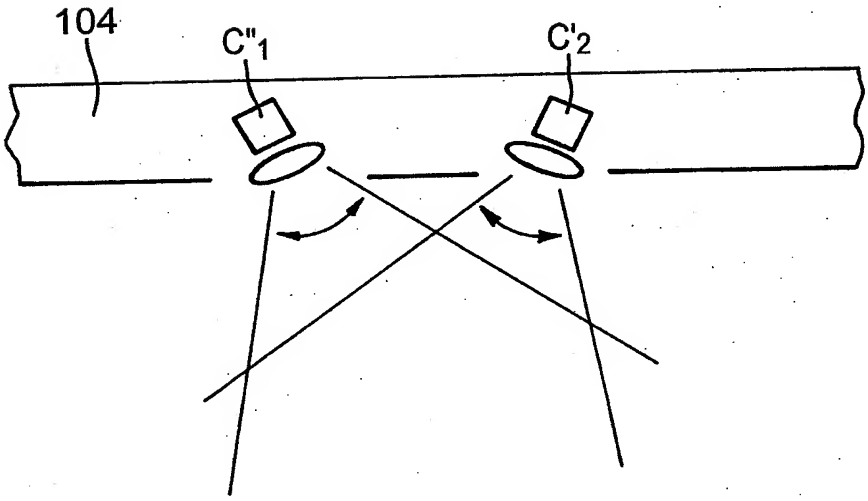


FIG. 4b

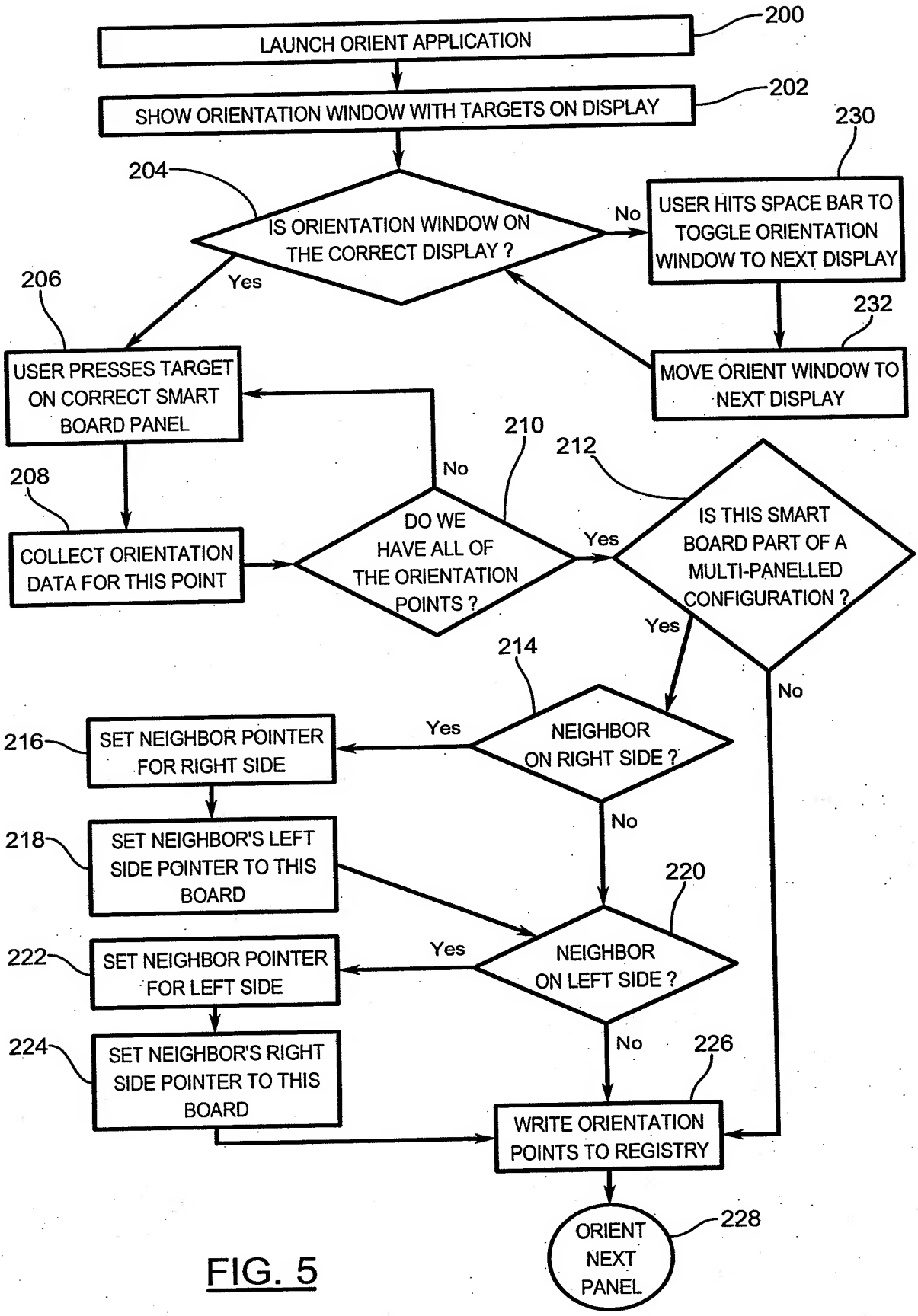

LAUNCH ORIENT APPLICATION
200
SHOW ORIENTATION WINDOW WITH TARGETS ON DISPLAY
202
204
IS ORIENTATION WINDOW ON THE CORRECT DISPLAY ?
No
230
USER HITS SPACE BAR TO TOGGLE ORIENTATION WINDOW TO NEXT DISPLAY
Yes
206
232
MOVE ORIENT WINDOW TO NEXT DISPLAY
USER PRESSES TARGET ON CORRECT SMART BOARD PANEL
210
212
No
208
DO WE HAVE ALL OF THE ORIENTATION POINTS ?
Yes
IS THIS SMART BOARD PART OF A MULTI-PANELLED CONFIGURATION ?
COLLECT ORIENTATION DATA FOR THIS POINT
Yes
214
No
NEIGHBOR ON RIGHT SIDE ?
Yes
216
SET NEIGHBOR POINTER FOR RIGHT SIDE
No
218
SET NEIGHBOR'S LEFT SIDE POINTER TO THIS BOARD
220
NEIGHBOR ON LEFT SIDE ?
Yes
222
SET NEIGHBOR POINTER FOR LEFT SIDE
No
226
224
SET NEIGHBOR'S RIGHT SIDE POINTER TO THIS BOARD
WRITE ORIENTATION POINTS TO REGISTRY
228
ORIENT NEXT PANEL

FIG. 5

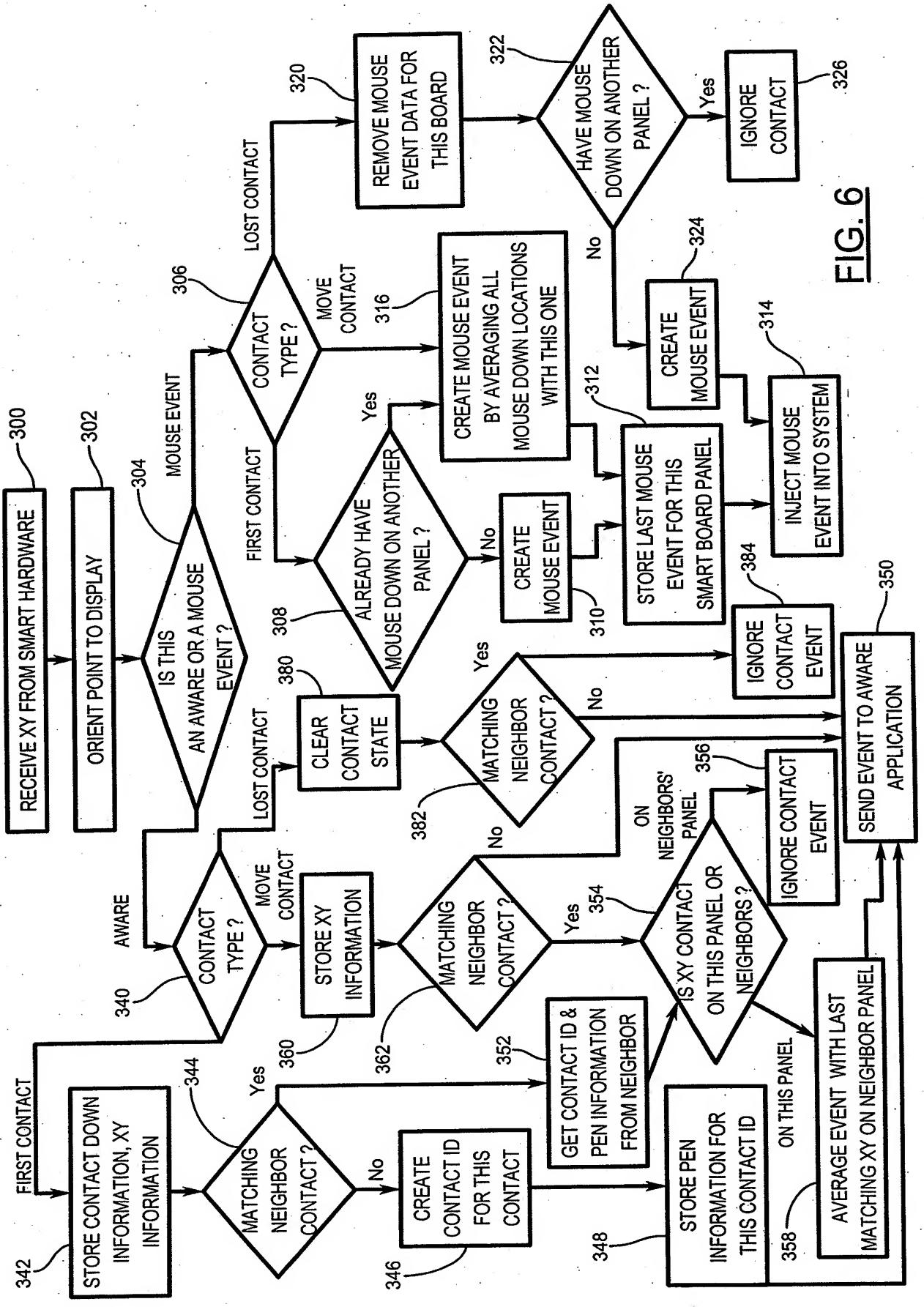

RECEIVE XY FROM SMART HARDWARE
300
ORIENT POINT TO DISPLAY
302
IS THIS AN AWARE OR A MOUSE EVENT ?
304
MOUSE EVENT
AWARE
CONTACT TYPE ?
340
FIRST CONTACT
STORE CONTACT DOWN INFORMATION, XY INFORMATION
342
MATCHING NEIGHBOR CONTACT ?
344
Yes
No
CREATE CONTACT ID FOR THIS CONTACT
346
GET CONTACT ID & PEN INFORMATION FROM NEIGHBOR
352
STORE PEN INFORMATION FOR THIS CONTACT ID
348
MOVE CONTACT
STORE XY INFORMATION
360
MATCHING NEIGHBOR CONTACT ?
362
Yes
No
IS XY CONTACT ON THIS PANEL OR NEIGHBORS ?
354
ON NEIGHBORS' PANEL
ON THIS PANEL
AVERAGE EVENT WITH LAST MATCHING XY ON NEIGHBOR PANEL
358
IGNORE CONTACT EVENT
356
SEND EVENT TO AWARE APPLICATION
350
LOST CONTACT
CLEAR CONTACT STATE
380
MATCHING NEIGHBOR CONTACT ?
382
Yes
No
IGNORE CONTACT EVENT
384
CONTACT TYPE ?
306
LOST CONTACT
REMOVE MOUSE EVENT DATA FOR THIS BOARD
320
HAVE MOUSE DOWN ON ANOTHER PANEL ?
322
Yes
IGNORE CONTACT
326
No
CREATE MOUSE EVENT
324
INJECT MOUSE EVENT INTO SYSTEM
314
MOVE CONTACT
CREATE MOUSE EVENT BY AVERAGING ALL MOUSE DOWN LOCATIONS WITH THIS ONE
316
FIRST CONTACT
ALREADY HAVE MOUSE DOWN ON ANOTHER PANEL ?
308
Yes
No
CREATE MOUSE EVENT
310
STORE LAST MOUSE EVENT FOR THIS SMART BOARD PANEL
312

FIG. 6

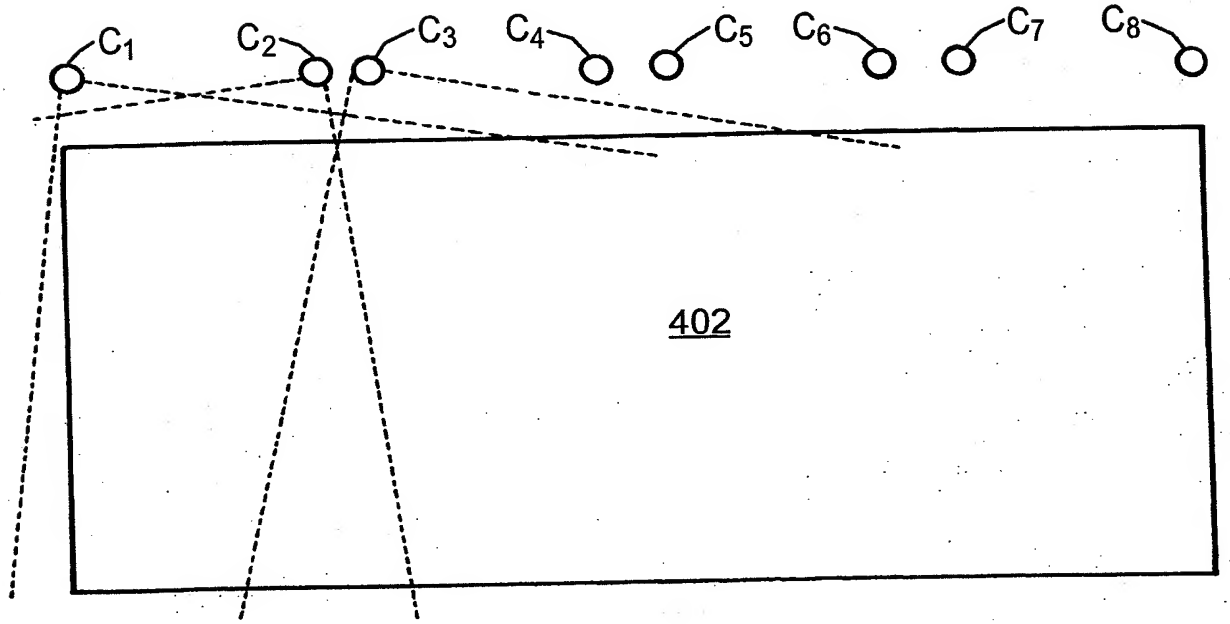


FIG. 7

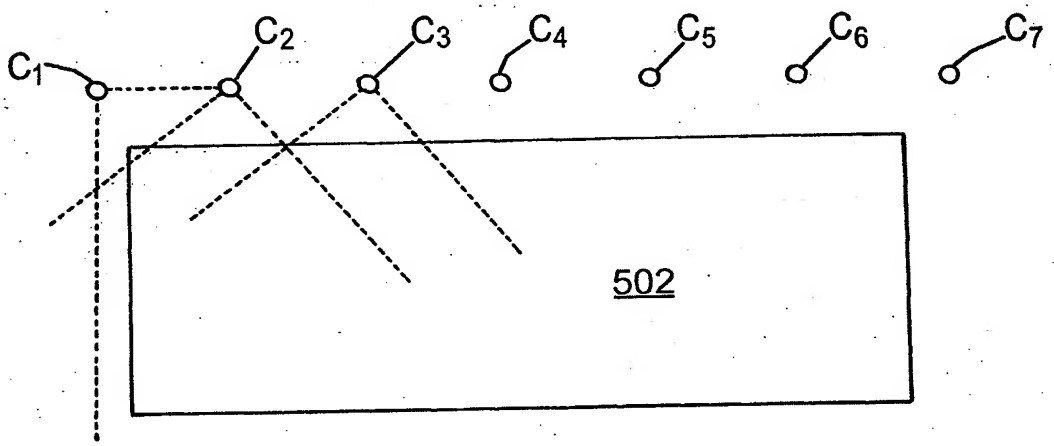
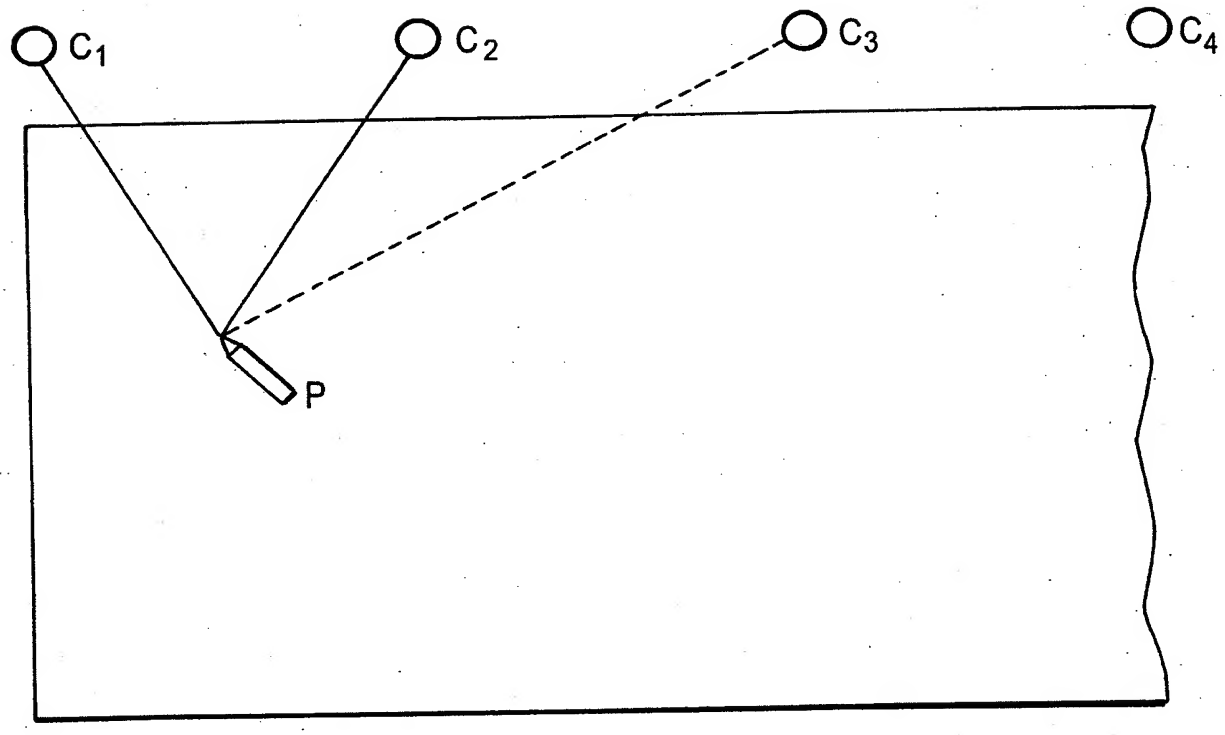


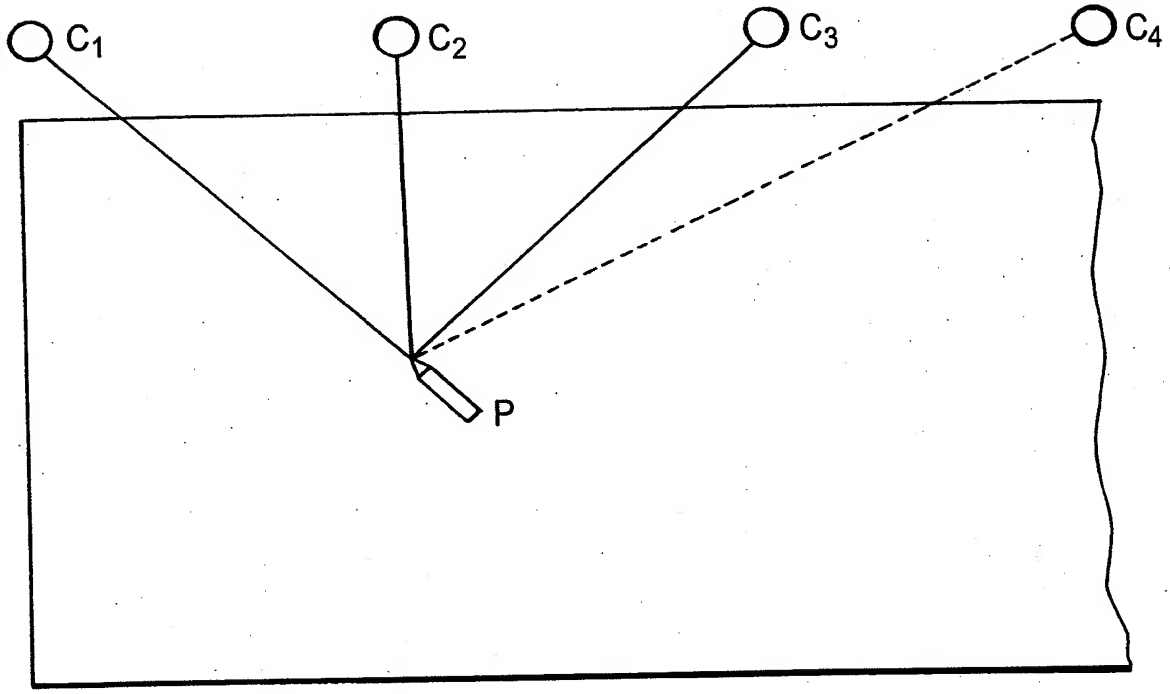
FIG. 8



PRIMARY TRIANGULATION PAIR: C_1+ C_2
CAMERA C_3MAY SEE POINTER P

C_3MAY:
- IGNORE POINTER P (TOO FAR AWAY)
- PASSIVELY TRACK POINTER P
- ASSIST IN TRIANGULATION OF POINTER P (C_1+ C_3, C_2+ C_3)

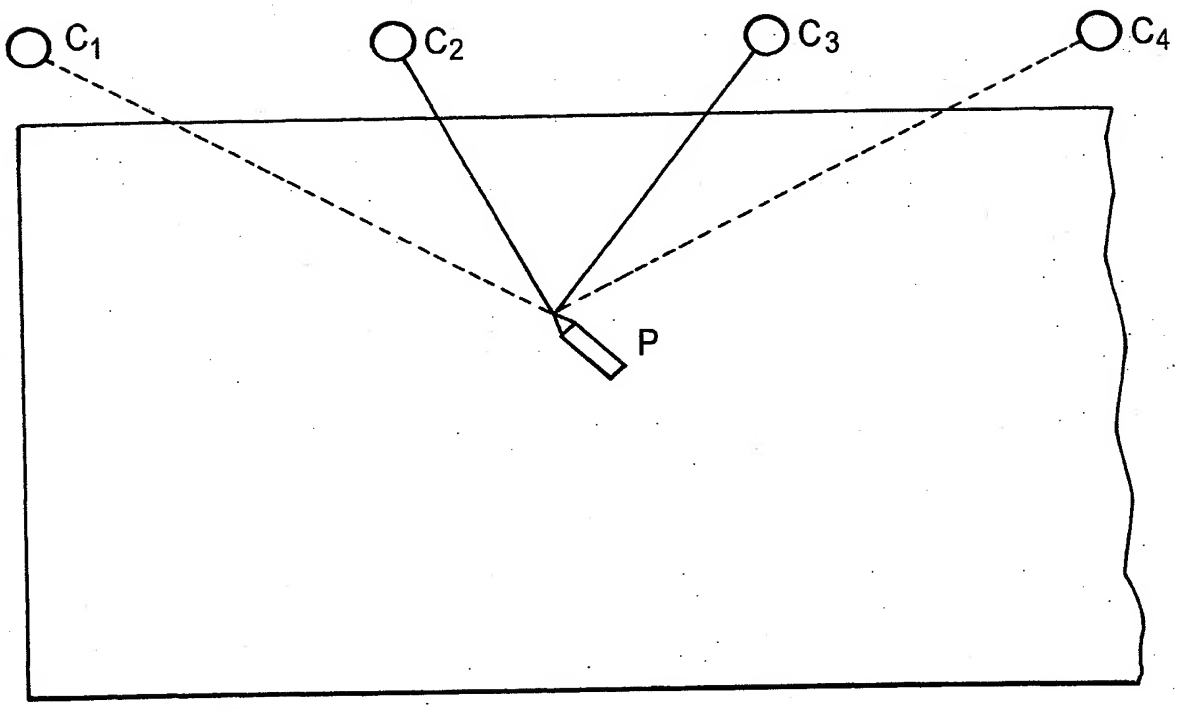
FIG. 9a



PRIMARY TRIANGULATION PAIRS: $C_1 + C_2$, $C_1 + C_3$, $C_2 + C_3$
CAMERA C_4 MAY SEE POINTER P

C_4 MAY:
- IGNORE POINTER P (TOO FAR AWAY)
- PASSIVELY TRACK POINTER P
- ASSIST IN TRIANGULATION OF POINTER P ($C_1 + C_4$, $C_2 + C_4$, $C_3 + C_4$)

FIG. 9b



PRIMARY TRIANGULATION PAIR: C_2+ C_3
CAMERAS C_1 AND C_4 MAY SEE POINTER P

C_1 & C_4 MAY:
- IGNORE POINTER P (TOO FAR AWAY)
- PASSIVELY TRACK POINTER P
- ASSIST IN TRIANGULATION OF POINTER P

C_1 + C_2, C_1 + C_3, C_1 + C_4

C_2 + C_3, C_2 + C_4

C_3 + C_4

FIG. 9c